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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/070,378	07/10/2002	Kurt Behre	2185-151	2810
6449	7590	12/17/2004		
ROTHWELL, FIGG, ERNST & MANBECK, P.C. 1425 K STREET, N.W. SUITE 800 WASHINGTON, DC 20005			EXAMINER CORCORAN, GLADYS J PIAZZA	
			ART UNIT 1733	PAPER NUMBER

DATE MAILED: 12/17/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/070,378

Applicant(s)

BEHRE, KURT

Examiner

Gladys J Piazza Corcoran

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 November 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 22-26 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 22-26 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____

FINAL ACTION

Specification Objections

1. The disclosure is objected to because of the following informalities: Page 2, lines 5-15 of the Specification refer to claims that have been cancelled. It is suggested to delete the references to claims.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 22, 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hunter (GB 3182703) optionally in view of Smith et al. (US Patent No. 3,086,899) and/or Adie (US Patent No. 3,066,059).

As to claim 22, Hunter discloses a method of forming a body component by forming a multiplicity of cup-like recesses (dimples), which point in one direction (core sheet 3; the embodiment of figure 1), in a flexible metal foil (page 2, lines 13-41; core sheet 3), wherein all the cup-like recesses formed in the flexible metal foil point in said one direction (the embodiment of figure 1), forming a laminated structure by applying a covering layer to that side of the flexible metal foil on which the openings of the cup-like recesses are located (face sheet 1, 2), applying an adhesive to the end faces of the recesses (Hunter discloses the layers are adhesively joined, therefore one of ordinary

skill in the art would readily appreciate that the adhesive is applied to the facing surfaces which include the end faces of the recesses), joining the laminated structure to a metal body sheet (second covering layer; face sheet 1, 2), by adhesively bonding end faces of the cup-like recesses of the laminated structure to the metal body sheet by means of the adhesive (page 2, lines 59-64).

As to the limitation that the flexible metal is a foil, Hunter discloses that the metal sheet is a thin sheet metal, which is considered to read on a foil. Additionally it is noted that Hunter discloses that the sheet thickness is in the order of 0.25mm or less, which is also considered to be in the conventional range of the thickness of a foil.

As to the limitation that the step of applying a covering layer to the openings of the recesses is performed prior to adhesively bonding a body sheet to the end faces of the cup-like recesses, Hunter discloses that the covering layers are attached to the flexible metal sheet but does not specifically disclose a particular order in which the sheets are attached. One of ordinary skill in the art at the time of the invention would readily recognize that there are only two ways to attach cover layers to a center core layer, i.e. simultaneously applying the sheets or applying one sheet prior to applying the other sheet. One of ordinary skill in the art would further recognize that the easiest, most efficient and most simple way to attach the cover layers would be to attach one cover sheet and then attach the second cover sheet. It would have been well within the purview of one of ordinary skill in the art at the time of the invention to apply the cover layer over the openings of the recesses and then the cover layer over the free ends of the recesses, only the expected results would be obtained. Optionally, Smith is cited to

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show that it is known in the art to apply one covering layer on the center core sheet with recesses where the covering layer is applied to cover the openings of the recesses in order to form the sandwich structure, thus showing it is known in the art to apply covering layers to the side with the openings of the recesses without a covering layer on the opposite side. Adie is also cited to show one example of where cover sheet layers (F2, F6, F10) are bonded to the side of the core (F1, F3, F5, F7, F9, F11) with the openings of the recesses prior to bonding cover layers (E, F4, F8, F12, etc.) to the opposite side with the ends of the recesses. Consequently, it would have been obvious to one of ordinary skill in the art at the time of the invention to provide the method of forming the body component as shown in Hunter by applying a first covering layer to the side of the flexible metal foil with the openings of the recesses prior to applying a second covering sheet to the side of the flexible metal foil with the free ends of the recesses as would have been well within the purview of one of ordinary skill in the art and further optionally, since it is known to apply a cover sheet to sheets with recesses by covering the openings in the sheet in order to enclose the recesses as exemplified by Smith and to apply the cover sheets to the openings side of the core prior to the ends side of the core as exemplified by Adie, only the expected results would be attained.

As to claim 26, the covering layer in Hunter is an aluminum sheet (page 2, lines 13-21).

4. Claims 23-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hunter optionally in view of Smith et al. and/or Adie as applied to claim 22 above, and

further in view of Ellis et al. (US Patent No. 4,980,010), Meier et al. (US Patent No. 6,099,683) and/or Jessup et al. (US Patent no. 5,938,875).

As to claim 23, Hunter discloses that the layers of the panel are attached by adhesive cement, such as epoxy resin, heat cured, or by welding, but does not specifically disclose joining by the application of heat and pressure. It is considered well known in the art to laminate layers with adhesive, in particular epoxy adhesive, for bonding sandwich panels with heat and pressure in order to ensure a strong bond. For example, Ellis discloses a method of laminating sandwich panels where the bonding is accelerated by providing heat and pressure (column 1, lines 39-43). Meier also discloses an example where a sandwich panel is formed by applying heat and pressure to accelerate the bond (column 1, lines 45-50). Finally, Jessup also discloses an example where heat and pressure (through and autoclave) are applied to bond sandwich panels with adhesive (column 3, lines 35-40). It would have been obvious to one of ordinary skill in the art at the time of the invention to provide the method of forming the panel as shown by Hunter by applying heat and pressure to the laminate in order to accelerate the curing of the adhesive and to form a stronger bond as is considered well known in the art and further exemplified by Ellis, Meier, and/or Jessup.

As to claim 24, it is well known in the art to provide a variety of adhesives for adhering parts of a sandwich panel including encapsulated, heat activatable adhesive systems. For example, Jessup discloses one example of an encapsulated, heat activatable adhesive for joining panels. It would have been obvious to one of ordinary skill in the art at the time of the invention to provide the method as shown in Hunter with

well known adhesives in the art including encapsulated, heat activatable adhesives to bond the layers together as exemplified by Jessup.

As to claim 25, it is well known in the art to provide foam systems, which are activated during the joining, that are introduced between the laminated structure and the metal body sheet in order to provide foam in the structural panels. It is further noted, that the adhesive in both Meier and Jessup are foam adhesives that are introduced between the layers prior to joining and then the foam is activated during joining under heat. It would have been obvious to one of ordinary skill in the art at the time of the invention to provide the method of forming panels as shown in Hunter with foam systems as is considered well known in the art in the structural panel art, additionally, it is known in the art to provide heat activatable foam adhesives that activate during joining as exemplified by Meier and/or Jessup.

5. Claims 22, 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Adie (US Patent No. 3,066,059) in view of Hunter (GB 3182703).

As to claim 22, Adie discloses a method of forming a body component by forming a multiplicity of cup-like recesses (dimples or cups 16), which point in one direction (see figure 3), in a flexible foil (foils F1, F3, etc.), wherein all the cup-like recesses formed in the flexible foil point in said one direction (see figure 3), forming a laminated structure by applying a covering layer (F2, F6, F10) to that side of the flexible foil on which the openings of the cup-like recesses are located (in pressing roller assembly C1, see figure 3), applying an adhesive to the end faces of the recesses (adhesive is applied between the cover layer and the end faces of the recesses, therefore adhesive is

applied to the end faces; additionally it is noted that while Adie discloses sprays S2 spraying adhesive to the cover layers, it would have been well within the purview of one of ordinary skill in the art to also or alternatively apply adhesive to the end faces of the recesses particularly in light of the disclosure that the sprayers S1 for spraying adhesive between the cover layer on the openings side sprays adhesive to both the cover layer and the openings; column 2, lines 66-69 and column 3, lines 8-10), joining the laminated structure to a body sheet (E, F4, F8, F12, D, etc.), by adhesively bonding end faces of the cup-like recesses of the laminated structure to the body sheet by means of the adhesive (column 3, lines 7-14).

As to the limitation that the flexible foil is a metal and the body sheet is of metal, Adie discloses that the materials used for the foil include thermoplastics but also the material may be chosen from a wide choice of materials which only depend upon the ultimate use of the final product. It is known in the art to form body components from metal foil core layers with recessed cups and metal cover layers. For example, Hunter discloses an example of forming a component body with metal cover layers and a metal foil core. It would have been obvious to one of ordinary skill in the art at the time of the invention to provide the method of forming a body component as shown by Aide by using well known materials for the component layers such as metal as exemplified by Hunter particularly since Aide discloses that any materials suitable for the desired end product may be chosen.

As to claim 26, as discussed above, it would have been obvious to use well known materials including aluminum as the covering layer as exemplified by Hunter which discloses the cover layer is an aluminum sheet (page 2, lines 13-21).

6. Claims 23-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Adie (US Patent No. 3,066,059) in view of Hunter as applied to claim 22 above, and further in view of Ellis et al. (US Patent No. 4,980,010), Meier et al. (US Patent No. 6,099,683) and/or Jessup et al. (US Patent no. 5,938,875).

As to claim 23, Aide discloses that the layers of the panel are attached by adhesive and then pressed or supplied with heat and then pressed (welding), but does not specifically disclose joining by the simultaneous application of heat and pressure. Hunter discloses that the layers of the panel are attached by adhesive cement, such as epoxy resin, heat cured, or by welding, but does not specifically disclose joining by the application of simultaneous heat and pressure. It is considered well known in the art to laminate layers with adhesive, for bonding sandwich panels with heat and pressure in order to ensure a strong bond. For example, Ellis discloses a method of laminating sandwich panels where the bonding is accelerated by providing heat and pressure (column 1, lines 39-43). Meier also discloses an example where a sandwich panel is formed by applying heat and pressure to accelerate the bond (column 1, lines 45-50). Finally, Jessup also discloses an example where heat and pressure (through and autoclave) are applied to bond sandwich panels with adhesive (column 3, lines 35-40). It would have been obvious to one of ordinary skill in the art at the time of the invention to provide the method of forming the panel as shown by Aide and Hunter by applying

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heat and pressure to the laminate in order to accelerate the curing of the adhesive and to form a stronger bond as is considered well known in the art and further exemplified by Ellis, Meier, and/or Jessup.

As to claim 24, it is well known in the art to provide a variety of adhesives for adhering parts of a sandwich panel including encapsulated, heat activatable adhesive systems. For example, Jessup discloses one example of an encapsulated, heat activatable adhesive for joining panels. It would have been obvious to one of ordinary skill in the art at the time of the invention to provide the method as shown in Aide and Hunter with well known adhesives in the art including encapsulated, heat activatable adhesives to bond the layers together as exemplified by Jessup.

As to claim 25, it is well known in the art to provide foam systems, which are activated during the joining, that are introduced between the laminated structure and the metal body sheet in order to provide foam in the structural panels. It is further noted, that the adhesive in both Meier and Jessup are foam adhesives that are introduced between the layers prior to joining and then the foam is activated during joining under heat. It would have been obvious to one of ordinary skill in the art at the time of the invention to provide the method of forming panels as shown in Aide and Hunter with foam systems as is considered well known in the art in the structural panel art, additionally, it is known in the art to provide heat activatable foam adhesives that activate during joining as exemplified by Meier and/or Jessup.

Response to Arguments

7. Applicant's arguments filed November 16, 2004 have been fully considered but they are not persuasive.

Applicant argues on page 5 that the reference Hunter does not refer to a method for producing a body component. The reference Hunter is cited to show it is known in the art to form a body component with a core having recesses all pointing in one direction and adhering cover layers to the two sides of the core. While Hunter does not disclose the particular order of steps in which the component is made, such would have been well within the purview of one of ordinary skill in the art at the time of the invention as further exemplified by Smith and/or Aide.

Applicant's argument in the paragraph that extends from page 5 to 6 refer to an embodiment relied upon for the previous claims that are no longer relied upon in view of the amendments to the claims to recite that all the recesses point in the same direction.

Applicant argues on page 6 that the reference Smith does not refer to a method for producing a body component where a cover layer is first applied to the side on which the openings are located. The reference Smith is cited as further evidence that it would have been obvious to one of ordinary skill in the art to apply the covering to the side with the openings prior to the other side since it is known as shown in Smith to apply a covering only to the side of the core with openings (thus exemplifying a capability in the art to applying a covering first to the side with the openings). It is further noted that the reference Aide further shows another example of applying a covering to the side with the openings first.

Conclusion

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).


A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gladys J Piazza Corcoran whose telephone number is (571) 272-1214. The examiner can normally be reached on M-F 8am-5:30pm (alternate Fridays off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Blaine Copenheaver can be reached on (571) 272-1156. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Gladys JP Corcoran
Primary Examiner
Art Unit 1733

GJPC